

VR2W BASICS MANUAL

December 9, 2011



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AMIRIX Systems Inc. Warranty and Disclaimer

WARRANTY

AMIRIX Systems Inc., doing business under its trade name VEMCO, provides a one (1) year warranty period for the Product from date of shipment.

VEMCO warrants that on the date of shipment all Products manufactured by VEMCO are free from defects in material and workmanship under normal use and service. This warranty applies to the components necessary for equipment upgrades, i.e. the VR1/VR2 to VR2W upgrade. With respect to transmitter products, while VEMCO is able to predict battery life with some certainty, VEMCO cannot guarantee that these Products will remain functional while submerged for extended periods of time. This warranty does not apply to any equipment, materials or design supplied by Buyer or a third party; re-battery services provided by VEMCO; Products for which VEMCO has not received payment; problems that results from: external causes such as accident, abuse, misuse; servicing not authorized by VEMCO; usage not in accordance with Product instructions; failure to follow the Product instructions or failure to perform preventative maintenance; usage of accessories, parts or components not supplied by VEMCO.

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All repairs, replacements and corrections described above shall be performed by VEMCO at its plant at Halifax, Nova Scotia, or at such other place as may be mutually agreeable, and with reasonable care and dispatch in order that the Product, accessory, equipment or part will not be kept out of service longer than necessary. Return to BUYER of a repaired, replacement, or corrected accessory, equipment, part or Product shall be at VEMCO's expense. Title to and risk of loss of the Product, accessory, equipment, or part returned to VEMCO pursuant hereto shall at all times remain with the BUYER, except that title to a returned accessory, equipment, part, or Product shall pass to VEMCO concurrently with shipment to BUYER of any item furnished by VEMCO to BUYER as a replacement therefore. VEMCO shall have only such responsibility for any Product, accessory, equipment, or part owned by the BUYER and in the possession of VEMCO as is chargeable by law to a bailee for hire, but shall not be chargeable for loss of use thereof.

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Normal wear and tear and the need for regular maintenance shall not constitute a defect under this warranty.

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EXPORT

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NEGOTIATED AGREEMENT

It is fully understood by the parties that the price of the Product and other mutual agreements of the parties set forth in this agreement were arrived at in consideration of this warranty, SPECIFICALLY INCLUDING THE WAIVER, RELEASE AND RENUNCIATION BY BUYER SET FORTH ABOVE (DISCLAIMER AND RELEASE).

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VR2W BATTERY INSTALLATION

This is a quick reference for installing or replacing the VR2W battery, and for attaching the VR2W receiver to a mooring line. The complete VR2W manual can be obtained by contacting our sales staff or can be viewed at www.vemco.com in PDF format.

BATTERY

The VR2W receiver is powered by a single "D" size 3.6 Volt Lithium battery with a connector attached – the Tadiran TL-5930/F. The battery is not installed in the VR2W when it is shipped to prevent battery life loss during shipping. Battery life is consumed from the time the battery is installed so always remove the battery when the receiver is not being used for an extended period of time. The battery must be installed before the VR2W can be initialized.

Battery Life

A new Lithium D-cell battery will last approximately 15 months in a VR2W-69kHz and approximately 8 months in a VR2W-180kHz.

Battery life is consumed from the time the battery is installed, even if the VR2W is not initialized for a study. Unlike the VR2 receiver, the VR2W begins recording when the battery is installed.

Battery Installation/Replacement

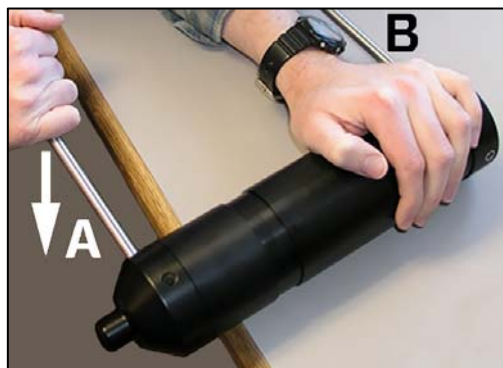
Inserting or replacing a battery in the VR2W requires three basic steps, opening the case, inserting/replacing the battery, and closing the case. Each of these steps is dealt with in detail in the following sections. Two steel rods are necessary to properly open and close the VR2W case. A pair of rods is included with each shipment of VR2W receivers.

Opening the VR2W Case

- 1) Make sure there is **absolutely no water** on or near the VR2W case. If the VR2W is attached to a wet rope, remove the receiver from the rope before opening the case.

WARNING: It is vitally important that the electronics inside the receiver case **do not come in contact with any water**. This also means the electronics cannot be exposed to a sudden change in temperature and humidity that will cause condensation to develop on the electronics and destroy the receiver.

- 2) Place the VR2W on a clean, flat surface so the transducer is hanging over the edge as shown in the photo. DO NOT let the receiver fall off the surface.
- 3) Insert one steel rod into the hole that runs through the diameter of the case near the flat end of the VR2W. This rod is labelled "B" in the photo.
- 4) Insert the other steel rod into the wider end of the probe hole on the end-cap of the receiver. Make sure the rod is fully inserted into the hole or damage may occur to the probe hole. This rod is labelled "A" in the photo.
- 5) Place a hand on the back of the receiver to hold it in place (see photo).




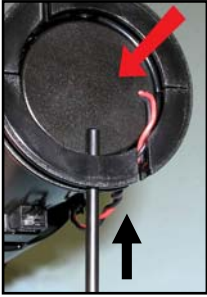
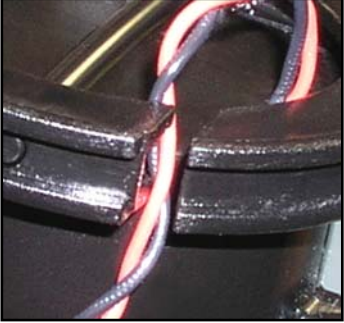

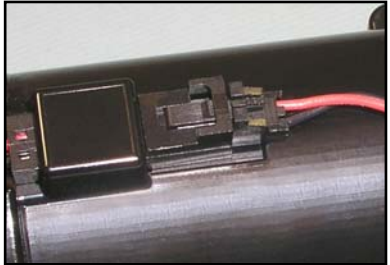



Opening the VR2W case.

- 6) Apply pressure to rod "A" in a downward direction (see arrow in photo) so the end-cap twists in a counter-clockwise direction when you are facing the transducer. Rod "B" will act as a brace while you apply pressure.
- 7) Continue moving the rod in the counter-clockwise direction until turning becomes easier.
- 8) Remove the steel rods from the VR2W case.
- 9) Use your hands to continue twisting the end-cap in a counter-clockwise direction until the end-cap and outer cylinder separate.
- 10) Slide the end-cap and cylinder apart until the battery compartment has cleared the cylinder.

WARNING: DO NOT impact the threads on the end-cap or they will dent and prevent the VR2W case from closing. See the Trouble Shooting section of VR2W manual for tips on thread care.

Inserting / Connecting Battery

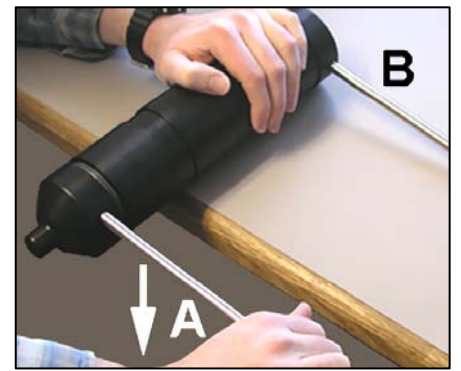
<p>STEP 1</p> <p>Was the battery shipped inside the receiver? Then connect the two halves of the battery connector as shown in Steps 8 and 9 (below) to power the receiver. If not, then continue with Step 2</p>	<p>STEP 2</p> <p>Verify the O-ring inside the battery cavity is still at the back of the cavity.</p> 	<p>STEP 3</p> <p>Slide the Lithium D-cell battery into the battery section at the end of the receiver so the battery's wires are outside the case.</p> 
<p>STEP 4</p> <p>Insert the battery pin into one of the holes in the edge around the battery cavity and slide the pin across the end of the battery until the ends of the pin are both in the receiver case (see photo at right).</p> 	 <p>Downward force (see red arrow) may be required on battery end to get the pin started.</p>	<p>STEP 6</p> <p>Place the battery wires into the gap in the end of the receiver case closest to the battery connector on the case. There are two gaps in the end of the case.</p> 
<p>STEP 7</p> <p>Place the O-ring in the O-ring groove around the end of the case so the battery wires are inside the O-ring. This also holds the battery pin in place.</p> 	<p>STEP 8</p> <p>Connect the two battery connector halves together until a "click" is heard and the VR2W receiver's light begins flashing.</p> 	<p>STEP 9</p> <p>Gather any excess battery wire at the end of the battery cavity and not along the side of the receiver casing. This reduces the chance of damage to the battery wires.</p> 

Closing the VR2W Case

- 1) Make sure the serial number on the band in the middle of the outer cylinder matches the serial number on the internal casing. This is particularly important when more than one VR2W receiver is open at the same time.
- 2) Inspect the O-ring surfaces to be sure they are clean, undamaged, and debris free.
- 3) Inspect the two O-rings near the threads on the end-cap to make sure they have not been damaged and that they are properly greased (see the Trouble Shooting section of VR2W manual for proper O-ring care).
- 4) Place a fresh desiccant pack in the bottom of the cylinder so both ends of the pack are touching the cylinder's sides.
- 5) Slide the end-cap into the cylinder until the first threads are inside the outer cylinder (see photo).
- 6) Turn the end-cap in a clockwise direction (when looking at the transducer) with your hand until it becomes too hard to turn.
- 7) Place the VR2W on a clean, flat surface so the transducer is hanging over the edge as shown in the photo. **DO NOT** let the receiver fall off the surface.
- 8) Insert one steel rod into the hole that runs through the diameter of the case near the flat end of the VR2W. This rod is labelled "B" in the photo.
- 9) Insert the other steel rod into the wider end of the probe hole on the end-cap of the receiver. Make sure the rod is fully inserted or damage may occur to the probe hole. This rod is labelled "A" in the photo.
- 10) Place a hand on the back of the receiver to hold it in place (see photo).
- 11) Apply pressure to rod "A" in a downward direction (see arrow in photo) so the end-cap twists in a clockwise direction when you are facing the transducer. Rod "B" will act as a brace while you apply pressure.
- 12) Continue moving the rod until the end-cap suddenly stops turning. **DO NOT** continue to apply pressure on the rod or the receiver case will be damaged. The gap between the end-cap and the outer cylinder will be closed. Do not over tighten the end-cap or the receiver case will be damaged.
- 13) Remove the steel rods from the VR2W case.
- 14) Deploy the VR2W receiver.



Desiccant pack in cylinder



Closing VR2W case.

CAUTION: It is recommended that the VR2W is tested with a test pinger and the VUE software prior to deployment to ensure proper operation of the VR2W.

A desiccant pack has been included in the bottom of the VR2W to reduce the occurrence of condensation in the VR2W. This pack should remain in the receiver case during storage and deployment.

We recommend that you replace the desiccant pack with each deployment and with each battery replacement cycle (see manual for instructions).

More information on the availability and usage of these packs is located on our website, www.vemco.com.



ATTACHMENT METHODS

The common method used to attach a VR2W receiver to a mooring line is to use five cable ties with certain qualities (cable tie information is found in Appendix E of the VR2W manual). One set of five cable ties is shipped with the receiver and more may be purchased from VEMCO. Details for using the cable ties are found in the Cable Tie Attachment Method section.

Additional equipment may be purchased from VEMCO to allow other methods of attachment to be used, including the traditional mounting rod used with past VR2W receiver cases. Contact VEMCO for more information on the optional attachment methods.

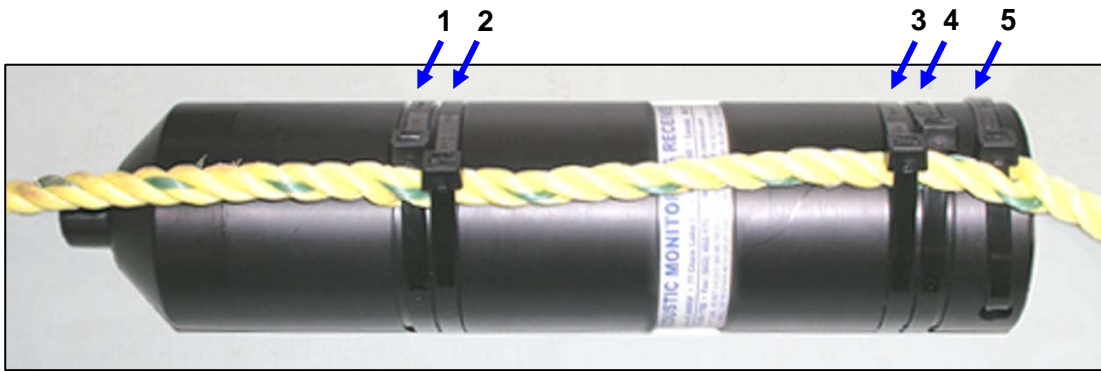
The transducer **must be kept free of mooring lines** regardless of the attachment method. Objects around the transducer will affect the **detection range** of the VR2W receiver.

For best horizontal range, mount the VR2W receiver in a vertical position. If the VR2W is deployed close to the bottom of the water, mount the VR2W with the transducer pointing up to the surface. If the VR2W is deployed close to the surface of the water, position the VR2W so the transducer is pointing down.

Cable Tie Attachment Method

The VR2W is attached directly to the mooring line with five non-releasing cable ties. Five cable ties are supplied with the VR2W and replacement cable ties can be purchased from VEMCO. Follow the instructions listed below to attach the VR2W receiver to the rope used as the mooring line. A minimum rope size of 3/8" diameter nylon rope is suggested.

- 1) Open the "warp in the rope":
 - a) Identify the location on the rope where the bottom of the VR2W receiver will be attached.
 - b) Twist the rope so the strands of the rope separate from each other and an opening in the rope is seen. A photo and description is found in the Glossary section of VR2W manual.
- 2) Slide one of the cable ties through the center of the rope. This cable tie is identified as number 5 in the photo below.
- 3) Place the VR2W receiver against the rope so the hole running through the bottom of the receiver is lined up with the cable tie.
- 4) Pass the cable tie through the hole in the bottom of the receiver and latch the cable tie so the head of the cable tie is next to the rope.
- 5) Wrap the cable tie labelled 4 in the photo below around the body of the VR2W so the cable tie is in the bottom half of the lower groove in the VR2W body (see the photo below).
- 6) Open the "warp in the rope" as described in Step 1 to line up with the #4 cable tie.
- 7) Slide the cable tie through the center of the rope and latch the cable tie so the head of the cable tie is next to the rope.
- 8) Wrap a cable tie around the VR2W receiver and the rope so the cable tie occupies the top half of the lower groove in the VR2W body (see the photo below).
- 9) Latch the cable tie so the head of the cable tie is over the rope. This cable tie is #3 in the photo below.
- 10) Repeat Steps 5 to 9 to place the cable ties labelled 1 and 2 in the photo below in the upper groove in the VR2W body.
- 11) Trim the cable ties so there is no excess cable tie material and no sharp edges.



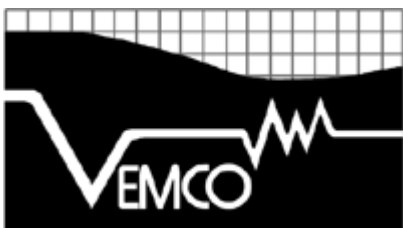
Cable tie locations shown for attaching the VR2W receiver to a mooring line.

IMPORTANT: Cut the cable ties when removing a VR2W from the mooring line. DO NOT re-use cable ties. Use only new cable ties when deploying a VR2W receiver.

LED FLASHES

The red LED on the side of the VR2W case flashes based on the task being performed or the status of the receiver. The flashes can be interpreted using the table below.

VR2W LED Flashes	Interpretation of Flashes
No flash	Battery is disconnected or has depleted
Two quick flashes every 5 seconds	VR2W is in record mode (records any received pings)
Two quick flashes every 10 seconds	The VR2W memory full
One short flash	An acoustic ping was received
One long flash	A complete detection was written to memory
Continuous long flashes (1 per second)	The VR2W is ready for <i>Bluetooth</i> wireless technology communication
LED on constantly	Communicating with VUE software using <i>Bluetooth</i> wireless technology



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